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ABSTRACT

A survey of past research reveals that intellectual capacity, particularly verbal proficiency, are important factors in reading performance. The purpose of this study was to determine if classroom teachers, through informal observation, can recognize indicators of intellectual ability. The Strang Informal Observation of Capacity Inventory and Thurstone's Primary Mental Abilities Test were administered to 195 kindergartners who were enrolled in the classes of 11 teachers in 11 different elementary schools. Findings indicate that an informal inventory of intellectual capacity was valid, that teachers can successfully use an informal inventory to make decisions regarding children's intellectual capacity, that accuracy of teachers' assessments was of a high level, and that the Strang Informal Observation of Capacity Inventory was appropriate for use with a heterogeneously grouped class. (KS)

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CAN TEACHERS INFORMALLY ASSESS MENTAL CAPACITY?

Intellectual capacity has been the foremost consideration in successful reading since the beginning of scientific educational research. Although there are related factors other than intelligence that account for reading retardation, many researchers concur that IQ is a highly significant factor. The studies of Silberberg and others (1969) have led them to conclude that it is probably the best single predictor of eventual scholastic success.

Although the measurement of intelligence is a highly controversial subject, it is generally believed that there are certain essential criteria of intelligence. Among these criteria are memory, ease of learning a new skill, size of vocabulary, ability to solve arithmetic problems, and inferential reasoning (Kagan, 1973).

The relationship of IQ test scores to reading test scores has interested researchers for many years. Scott (1970) points out that "most reading authorities agree that a child's general intellectual ability is an important ingredient of successful reading." Past research reveals that verbal ability, particularly proficiency, becomes highly important for reading performance as the child proceeds through school. Especially is this true as

CS 003 222

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the act of reading becomes more an information processing task rather than a decoding activity (Bruininks, 1970).

Wallbrown and others (1974) obtained correlations between mental age and reading achievement ranging from .35 to .70. They likewise obtained a correlation of .75 between mental age and the Metropolitan Readiness Test scores. These researchers concluded that mental age scores often correlate substantially with reading achievement.

Basic research on vocabulary control has been reported by Gates in a series of investigations covering a wide span of years. Gates noted that children vary markedly according to intelligence levels in terms of the number of repetitions needed in acquiring reading vocabulary. He estimated the average minimum number of repetitions per word that need to be provided for first grade children at various intelligence levels (Weintraub, 1967).

IQ	Number of Repetitions
120 - 129	20
110 - 119	30
90 - 109	35
80 - 89	40
70 - 79	45
60 - 69	55

Noelker and Schumsky (1973) used three memory tasks to discriminate between normal and retarded readers: sequencing, memory for form, and memory for position. They state: "The

results confirm the findings of other authors in demonstrating a significant difference in sequencing ability between normal and reading-retarded children."

Several approaches to the assessment and prediction of learning ability have been advocated to circumvent the limitations of the intelligence test. Among these are the development of systematic teacher observational techniques and the use of achievement tests. One such approach is to have the child engaged directly in learning in order to assess his learning ability. A study by Sewell and Severson (1974) underscores the value of studying the child as he actually learns as opposed to simply assessing what he knows from past experiences. By observing the child under conditions of standardized learning, and by selecting material from the actual body of material to be learned, some of the weakensses of the IQ test should be eliminated. This should be especially advantageous for the socio-disadvantaged child.

Four basic tasks are included in Ruth Strang's "Informal Observation of Capacity Inventory."* The tasks include (1) speed of learning, (2) oral vocabulary, (3) organization of ideas, and (4) seeing relationship of ideas. Speed of learning among children can be observed in any type teaching-learning situation, whether written or oral. Oral vocabulary can be evaluated by a careful listener. Students may draw or write, depending on age, to indicate organization of ideas, such as foods we eat, tools we use, or authors and book titles. Seeing relationship of

*Unpublished, but shared by Dr. Strang with her graduate students. It was made available for this study by Mrs. Dorothy Kendall Bracken.

ideas in phrases or sentences may be observed when the student indicates his understanding of the meaning involved. A summary of responses in the four situations described above indicate a level of mental functioning of each student in comparison to other students in his class.

PROCEDURE OF THE STUDY

The purpose of this study was to determine if classroom teachers, through informal observation, can recognize indicators of intellectual functioning. The Strang "Informal Observation of Capacity Inventory" and Thurstone's Primary Mental Abilities Test were administered. The resulting data were correlated using the Spearman Rho formula.

The subjects were one hundred nine-five children enrolled in the classes of eleven teachers in eleven different elementary schools in grades kindergarten through six during the spring of 1976. The teachers were enrolled in a graduate seminar in reading education.

Correlation coefficients and levels of significance are presented in Table I.

TABLE I

SPEARMAN RHO CORRELATION COEFFICIENTS AND LEVELS OF SIGNIFICANCE BETWEEN PUPIL SCORES ON PRIMARY MENTAL ABILITIES TEST AND TEACHER RATINGS BY STRANG METHOD

Group	p	Level of Significance
Teacher A	.67	.01
Teacher B	.77	.01
Teacher C	.66	.01
Teacher D	.64	.01
Teacher E	.49	.05
Teacher F	.49	NS
Teacher G	.53	.05
Teacher H	.91	.05
Teacher J	.95	.01
Teacher K	.68	.01
Teacher L	.64	.01

The .05 level of significance was designated as the point of acceptance of the positive hypothesis. It will be noted that out of the eleven groups participating in the study, seven of the correlation coefficients were significant at the .01 level or better, and three others were significant at the .05 level or better.

CONCLUSIONS

The following conclusions were based on the findings of this study:

1. The research examined validates the use of an informal inventory in evaluating individual children's intellectual capacity.
2. Teachers can successfully use an informal inventory in making decisions about intellectual capacity of children.
3. Teachers can be expected to be reasonably accurate in making estimates of intellectual capacity.
4. The Strang Informal Observation of Capacity Inventory is appropriate for use with a heterogeneously grouped class.

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